

REMARKS

Claims 1-49 are pending. No new matter has been introduced. Reexamination and reconsideration of this application are respectfully requested.

In the July 3, 2003 Office Action, the Examiner rejected claims 1-49. Claims 1-3, 5-13, 15-21, and 23-49 were rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,504,270 to Sethares ("Sethares"), in view of U.S. Patent No. 5,536,902 to Serra ("Serra"), and further in view of U.S. Patent No. 6,182,042 to Peevers ("Peevers"). Claims 4, 14, and 22 were rejected under 35 U.S.C. §103(a) as being obvious over Sethares, in view of a combination of Serra, Peevers, and Official Notice.

Attached herewith is a certified English translation of Japanese Patent Application No. 9-296050 ("the priority application"), from which the present application claims priority pursuant to 35 U.S.C. §119. The filing date of the priority application is October 28, 1997. The filing date of Peevers is July 7, 1998. Accordingly, because applicants' priority date is earlier than the filing date of Peevers, Peevers is not prior art under 35 U.S.C. §102(e), and therefore cannot be used in a rejection under 35 U.S.C. §103(a).

Claims 1-3, 5-13, 15-21, and 23-49 were rejected under 35 U.S.C. §103(a) as being obvious over Sethares, in view of a combination of Serra and Peevers. Claims 4, 14, and 22 were rejected under 35 U.S.C. §103(a) as being obvious over Sethares, in view of a combination of Serra, Peevers, and Official Notice.

With respect to independent claims 1, 3, and 25, the Examiner noted that Serra and Sethares, in combination, does not teach the following:

"modulating amplitude value coordinates or a combining means for

combining the modulated frequency value coordinates and the modulated amplitude value coordinates to synthesize sinusoidal wave components of the output voice signal having an output pitch and an output timbre, of the input voice signal, and influenced by a reference pitch and a reference timbre of the reference signal.”

However, the Examiner stated that Peevers teaches a system and method for sound modification employing spectral warping techniques, and that it would have been obvious to combine the teachings of Sethares, Serra, and Peevers in the direction of independent claims 1, 3, and 25.

Representative independent claim 1 recites (with emphasis added):

“An apparatus for converting an input voice signal into an output voice signal according to a reference voice signal, the apparatus comprising:
extracting means ...;
separating means ...;
memory means ...;
first modulating means for modulating the frequency value coordinates of the sinusoidal wave components of the input voice signal according to the reference pitch information retrieved from the memory means, to generate modulated frequency value coordinates;
second modulating means for modulating the amplitude value coordinates of the sinusoidal wave components of the input voice signal according to the reference amplitude information retrieved from the memory means;
combining means for combining the modulated frequency value coordinates and the modulated amplitude value coordinates to synthesize sinusoidal wave components of the output voice signal having an output pitch and an output timbre different from an input pitch and an input timbre, of the input voice signal, and influenced by a reference pitch and a reference timbre, of the reference voice signal; and
mixing means ...”

As stated above, Peevers is not prior art, and the Examiner indicated that the combination of Sethares and Serra discloses no such modulating means and combining means as recited in independent claim 1. Therefore, independent claim 1 distinguishes over Sethares and Serra, in combination. Claims 2, 4-8, 30, 36, and 37 all depend, directly or indirectly, from independent claim 1, and therefore also distinguish over Sethares and Serra, in combination, for the same reasons as those set

forth above with respect to independent claim 1. Independent claim 3 contains a “modulating means” limitation similar to that of independent claim 1, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with respect to independent claim 1. Independent claim 25 contains “modulating” and “combining” limitations similar to those of independent claim 1, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with respect to independent claim 1. Claims 33, 42, and 43 all depend, directly or indirectly, from independent claim 25, and therefore also distinguish over Sethares and Serra, in combination, for the same reasons as those set forth above with respect to independent claim 25.

With respect to independent claims 9, 13, 26, and 48, the Examiner noted that Serra and Sethares, in combination, does not teach the following:

“modulating amplitude value coordinates or a normalizing means for normalizing the amplitude value coordinates of the sinusoidal wave components of the input voice signal and a mixing means for mixing the normalized amplitude value coordinates of the input voice signal and the memorized amplitude value coordinates of the reference voice signal with one another by a predetermined ratio to produce mixed amplitude value coordinates and multiplying means for multiplying the normalized amplitude value coordinates of the sinusoidal wave components of the input voice signal with the mean amplitude of the input voice signal.”

However, the Examiner stated that Peevers teaches a system and method for sound modification employing spectral warping techniques, and that it would have been obvious to combine the teachings of Sethares, Serra, and Peevers in the direction of independent claims 9, 13, 26, and 48.

Representative independent claim 9 recites (with emphasis added):

“An apparatus for converting an input voice signal into an output voice signal according to a reference voice signal, the apparatus comprising:
extracting means ...;
memory means ...;

modulating means for modulating the amplitude value coordinates of the sinusoidal wave components of the input voice signal extracted from the input voice signal according to the reference amplitude information retrieved from the memory means; and

mixing means for mixing the plurality of the sinusoidal wave components having the modulated amplitude value coordinates to synthesize the output voice signal having a timbre different from that of the input voice signal and influenced by that of the reference voice signal, wherein the modulating means comprises

normalizing means for normalizing the amplitude value coordinates of the sinusoidal wave components of the input voice signal by a mean amplitude of the input voice signal, to generate normalized amplitude value coordinates,

a second mixing means for mixing the normalized amplitude value coordinates of the input voice signal and the memorized amplitude value coordinates of the reference voice signal with one another by a predetermined ratio to produce mixed amplitude value coordinates, and

multiplying means for multiplying the normalized amplitude value coordinates of the sinusoidal wave components of the input voice signal with the mean amplitude of the input voice signal.”

As stated above, Peevers is not prior art, and the Examiner indicated that the combination of Sethares and Serra discloses no such “modulating means,” “mixing means,” or “normalizing means” as recited in independent claim 9. Therefore, independent claim 9 distinguishes over Sethares and Serra, in combination. Claims 10-12, 14-16, 31, 38, and 39 all depend, directly or indirectly, from independent claim 9, and therefore also distinguish over Sethares and Serra, in combination, for the same reasons as those set forth above with respect to independent claim 9. Independent claim 13 contains “modulating means” and “mixing means” limitations similar to those of independent claim 9, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with respect to independent claim 9. Independent claim 26 contains “modulating,” “mixing,” and “normalizing” limitations similar to those of independent claim 9, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with

respect to independent claim 9. Claims 34, 44, and 45 all depend, directly or indirectly, from independent claim 26, and therefore also distinguish over Sethares and Serra, in combination, for the same reasons as those set forth above with respect to independent claim 26. Independent claim 48 contains “modulating means” and “mixing means” limitations similar to those of independent claim 9, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with respect to independent claim 9.

With respect to independent claims 17, 19, 27, and 49, the Examiner noted that Serra and Sethares, in combination, does not teach the following:

“modulating amplitude value coordinates or a combining means for combining the modulated frequency value coordinates and the modulated amplitude value coordinates to synthesize sinusoidal wave components of the output voice signal having an output pitch and an output timbre different from an input pitch and an input timbre, of the input voice signal, and influenced by a reference pitch and a reference timbre of the reference signal.”

However, the Examiner stated that Peevers teaches a system and method for sound modification employing spectral warping techniques, and that it would have been obvious to combine the teachings of Sethares, Serra, and Peevers in the direction of independent claims 17, 19, 27, and 49.

Representative independent claim 17 recites (with emphasis added):

“An apparatus for synthesizing an output voice signal from an input voice signal and a reference voice signal, the apparatus comprising:
an analyzer device ...;
a separating device ...;
a source device ...;
a modulator device that modulates the parameter set of the sinusoidal wave components according to the reference information, to generate modulated amplitude value coordinates;
a regenerator device...I;
a second modulator device to modulate the amplitude value coordinates of the sinusoidal wave components of the input voice signal according to reference amplitude information, representative of amplitudes of the sinusoidal wave components contained in the reference voice signal,

**to generate modulated amplitude value coordinates;
a combining device to combine the modulated frequency value coordinates and the modulated amplitude value coordinates to synthesize sinusoidal wave components of the output voice signal having an output pitch and an output timbre different from an input pitch and an input timbre, of the input voice signal, and influenced by a reference pitch and a reference timbre, of the reference voice signal."**

As stated above, Peevers is not prior art, and the Examiner indicated that the combination of Sethares and Serra discloses no such "first modulator device," "second modulator device," and "combining device" limitations as recited in independent claim 17. Therefore, independent claim 17 distinguishes over Sethares and Serra, in combination. Claims 18, 28, 32, 40, and 41 all depend, directly or indirectly, from independent claim 17, and therefore also distinguish over Sethares and Serra, in combination, for the same reasons as those set forth above with respect to independent claim 17. Independent claim 19 contains a "modulator device" limitation similar to that of independent claim 17, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with respect to independent claim 17. Claims 20-24 all depend, directly or indirectly, from independent claim 19, and therefore also distinguish over Sethares and Serra, in combination, for the same reasons as those set forth above with respect to independent claim 19. Independent claim 27 contains "modulating" and "combining" limitations similar to those of independent claim 17, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with respect to independent claim 17. Claims 29, 35, 46, and 47 all depend, directly or indirectly, from independent claim 27, and therefore also distinguish over Sethares and Serra, in combination, for the same reasons as those set forth above with respect to independent claim 27. Independent claim 49 contains "modulating" and "mixing" limitations similar to those of

independent claim 17, and therefore also distinguishes over Sethares and Serra, in combination, for reasons similar to those set forth above with respect to independent claim 17.

With respect to claims 4, 14, and 22, the Examiner stated took Official Notice that implementation of a switching mechanism to output an original signal when an input signal cannot be analyzed is well known in the art, and it would have been obvious to a person of ordinary skill to combine the teachings of Sethares, Serra, Peevers, and the Examiner's Official Notice in the direction of claims 4, 14, and 22.

As stated above, Peevers is not prior art. The Examiner's Official Notice does not make up for the deficiencies of Sethares and Serra, in combination. Specifically, Claim 4 depends from independent claim 1 and therefore incorporates by reference all limitations of independent claim 1. As discussed above with respect to independent claim 1, the combination of Sethares and Serra does not teach the "modulating means" and "combining means" limitations of independent claim 1. The Examiner's Official Notice also does not teach such limitations. Accordingly, claim 4 distinguishes over Sethares and Serra, in combination with the Examiner's Official Notice.

Claim 14 depends from independent claim 9 and therefore incorporates by reference all limitations of independent claim 9. As discussed above with respect to independent claim 9, the combination of Sethares and Serra does not teach the "modulating means," "mixing means," and "normalizing means" limitations of independent claim 9. The Examiner's Official Notice also does not teach such limitations. Accordingly, claim 14 distinguishes over Sethares and Serra, in combination with the Examiner's Official Notice.

Claim 22 depends from independent claim 17 and therefore incorporates by reference all limitations of independent claim 17. As discussed above with respect to independent claim 17, the combination of Sethares and Serra does not teach the “first modulator device,” “second modulator device,” and “combining device” limitations of independent claim 17. The Examiner’s Official Notice also does not teach such limitations. Accordingly, claim 22 distinguishes over Sethares and Serra, in combination with the Examiner’s Official Notice

Accordingly, applicants respectfully submit that the Examiner’s rejection of claims 1-49 under 35 U.S.C. §103(a) should be withdrawn.

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Applicants believe that the foregoing amendments place the application in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call either of the undersigned attorneys at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.

Respectfully submitted,

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